

Annual report

LUND UNIVERSITY HUMANITIES LAB | TEN YEAR ANNIVERSARY | 2017



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The Director's introduction

Lund University Humanities Lab is a department for interdisciplinary research and training hosted by the Joint Faculties of Humanities and Theology (JFHT) at Lund University. It is open to scholars, teachers, and students at these faculties but also to users across Lund University and beyond. We host technology, methodological know-how, data management and archiving expertise, and a wide range of research projects. The Lab has facilities in both buildings that host departments in the Humanities and Theology at Lund University – the Centre for Languages and Literature and LUX.

Lab activities are centred around the Humanities with research targeting issues of communication, culture, cognition and learning, but many projects are interdisciplinary and conducted in collaboration with the Social sciences, Medicine, the Natural sciences, Engineering, and e-Science. We provide training in hosted technologies and related methods through courses and tutorials, seminar series, and guided demo sessions. We are also an arena for collaboration between academia and external stakeholders in education, industry, and cultural institutions locally, nationally, and internationally. The Lab is a dynamic environment enabling scholars across the JFHT to combine traditional and novel methods, and to interact with other disciplines.

In 2017 the Lab celebrated its tenth anniversary since the official inauguration in 2007. Happily, this celebration coincided with Lund University's 350th anniversary giving the festivities extra significance and splendour. It was a wonderful occasion to take stock of developments, to invite the general public and to showcase activities and facilities. In a two-day celebration, we hosted an academic symposium taking us from the earliest days of the Lab, when brave and visionary decision makers decided to allocate resources to a lab facility for the Humanities and Theology, right up to contemporary research. On the second day we invited the public to a day of practical demonstrations and hands-on trials held at the Museum of Sketches and Public Art. The celebrations highlighted the continued

growth and expansion of Lab activities and engagements at all levels.

We are proud to have more users than ever, new collaborations, courses, seminar series, and as always, a string of visiting scholars. In 2017 we hosted workshops and meetings on everything from research data management to how speech and gesture organise discourse, and



Marianne Gullberg Director Lund University Humanities Lab

digital methods in archaeology. We became an accredited *Knowledge Centre* in the European Research and Infrastructure Consortium CLARIN for language technology. We recruited two new Lab members with expertise on the brain. We participated in university-wide enterprises such as the DATA theme at the Pufendorf Institute for Advanced Studies.

In 2017 we were also lucky enough to receive a generous grant from the Lund University Research Board to secure an upgrade of the Lab facilities. We are deeply grateful for this support.

This Annual Report 2017 showcases some of the Lab activities and, of course, the tenth anniversary celebrations, highlighting that the Humanities Lab is as dynamic as ever – an exciting environment for scholars to tackle the scientific challenges ahead.

The Dean's introduction

The Joint Faculties of Humanities and Theology are privileged to serve as hosts to Lund University Humanities Lab. A leading research and training facility, the Humanities Lab has become a key infrastructural unit at Lund University.

Since its official opening in 2007, the Lab has inspired scholars in the Humanities and Theology to develop totally new approaches to challenges encountered in their research. The ten-year celebrations in 2017 highlighted how many of our disciplines now rely on the Humanities Lab as an invaluable component in their research. The festivities also emphasised the extent to which the Lab is a front-runner for infrastructures in contemporary Humanities with increasing emphasis on digital tools, computational power, and mixed methods. However, despite its name, the Lab is by no means restricted to the Humanities and Theology. Most faculties at Lund University employ scientists for whom the Humanities Lab is a vital resource. Researchers from all over the world collaborate with colleagues at and through the Lab. Lund University Humanities Lab is a vigorous interdisciplinary research unit where scholars and students come together in a uniquely exciting and highly productive research environment. We hope to see it become ever more central to research endeavours in the next decade.



Johannes Persson Dean of the Joint Faculties of Humanities and Theology

Organisation

The Lab is an autonomous department, sorting directly under the Joint Faculties of Humanities and Theology. It is led by the Director who is also the Chairman of the Steering committee. Organisationally, research in the Lab is of two kinds. Most research in the Lab is conducted by scholars whose research grants and groups are located in their home departments. These scholars come to the Lab to conduct their empirical studies using Lab equipment and resources, and then return to their home departments. The Lab also hosts its own externally funded research projects focusing on infrastructure, such as grants from the strategic research area for e-science eSSENCE and the consortium Swe-CLARIN. Finally, it exceptionally hosts projects with grants and research groups located in the Lab. Examples in 2017 include *LANG KEY* (Burenhult), and *Embodied Bilingualism* (Gullberg).



Leadership

STEERING COMMITTEE

Director of the Humanities Lab – Marianne Gullberg

Marianne Gullberg is professor of psycholinguistics at the Centre for Languages and Literature. Her fields of expertise include adult second language acquisition, bilingual acquisition and processing, and gesture production and comprehension in acquisition. She previously headed a research group on multilingual processing at the Max Planck Institute for Psycholinguistics with Prof. P. Indefrey, and is a co-founder of the Nijmegen Gesture Centre with Prof. A. Özyurek, the first centre of its kind. Her current research targets multimodal bilingual language processing, the earliest stages of implicit language learning, and bimodal discourse cohesion. She is the recipient of a Wallenberg Scholar Grant.

Research Engineer – Stefan Lindgren

Stefan Lindgren is a research engineer in the Lab with special responsibility for technology and procurement. His particular expertise lies in 3D data, motion capture, and virtual reality. In this, he works closely with archeologists and historians, but also cognitive scientists, and linguists.

Educational Developer – Frida Splendido

Frida Splendido is a senior lecturer of Swedish as a foreign/second language at the Centre for Languages and Literature. Her research focuses on language acquisition, in particular phonological development in second language learners and bilingual children. In the Lab she is responsible for training, course coordination, and course development.

Research Representative – Victoria Johansson

Victoria Johansson is associate professor and senior lecturer of Linguistics at the Centre for Languages and Literature. Her research focuses on language development through the lifespan, with special focus on language production and writing development, including developing research methodologies using keystroke logging and eye tracking. In the lab she is responsible for research issues.

Administrative Coordinator – Maja Petersson

Maja Petersson is administrative coordinator in the Lab. She is responsible for monitoring action plans, policy and procedure to optimise project managment in the lab. She is also responsible for communicating about the Lab internally and externally.











Lund University Humanities Lab 10th Anniversary Celebrations 2017

HOW LUND UNIVERSITY HUMANITIES LAB HAS CHANGED RESEARCH - A CELEBORATORY SYMPOSIUM AND A DAY OF OUTREACH EVENTS

Over the last decade LU Humanities Lab has contributed to a new research landscape in the Humanities and Social Sciences. We celebrated our tenth anniversary in October 2017 with an academic symposium for invited speakers and guests, followed by a day of events for the general public at the Museum of Sketches for Public Art.

Lund University Humanities Lab is an interdisciplinary department for research infrastructure and training at the Joint Faculties of Humanities and Theology. From humble beginnings at its inauguration in 2007, the Lab has steadily grown, increasing the scope of research conducted in the Lab both in terms of disciplines, domains, number of users, and collaborations. The Lab has contributed to a new landscape for scholars in the Humanities and Social Sciences, allowing them to complement their traditional tools and techniques with new ones, and also facilitated more interdisciplinary research and collaborations. October 2017 marked the tenth anniverary of the Lab, now with over 500 users, which called for celebrations.

The tenth anniversary festivities started on October 19 with a celebratory symposium entitled How Lund Unversity Humanities Lab has changed research for invited guests, speakers, decision makers, and stakeholders from both the past and the present. The talks showcased the diversity of research done in the lab over the years, as well as the interdisciplinary spirit and healthy curiosity that characterises lab users. Topics ranged from digital archeology to cat talk, reading and writing, and the effect of sleep on memory. The symposium was well attended and the lively discussions may well have sparked some new research questions.

On October 20, the lab hosted a public event at the Museum of Sketches for Public Art, inviting the general public to try some of the research technology used in the lab. Museum visitors could try eye-tracking to use gaze to play computer games, and track how they look at art; they could try keyboard logging to see how well they write; they could 3D scan a sculpture; and they could visit a villa in Pompeii virtually using head-mounted virtual reality.



Brief facts

DURING 2017, THE LAB HAD OVER 500 USERS AND 50 PROJECTS RUNNING IN THE LAB, 30 OF THEM STARTED DURING THAT YEAR.

500 USERS

The figure shows % of all users by faculty at Lund University

VISITORS

We had visitors from Australia, Canada, China, Croatia, Denmark, Germany, Great Britain, Hungary, Iceland, Italy, Netherlands, Norway, South Africa, Sweden and USA.

DEMOS

The Lab organised 31 tours and lab demos.

CONSULTATIONS

The lab offered consultations on software, technology, and analyses on 94 occasions.

WORKSHOPS AND SYMPOSIA

The Lab organised 11 workshops and symposia on various topics.



SOCIAL MEDIA FOLLOWERS: 700

Most liked and retweeted posts: media apperances, project grants, and presentations of staff's accomplishments.





Research

EYE-TRACKING. In 2017 eye-tracking technology and Lab expertise was engaged in a range of different projects involving different disciplines, faculties, national and international collaborations. Lab members continued to address fundamental questions related to eye movements and eye movement behavior, in healthy participants as well as in participants with visual disorders. For example, an ongoing project examines eye movements in patients with nystagmus, a condition in which the eyes make repetitive, uncontrolled movements, often resulting in reduced vision affecting balance and coordination (Nyström, Rosengren, Stridh, Hammar). The project has the potential to help improve diagnosis of the condition and evaluation of clinical interventions. Another ongoing project with the University of Nottingham investigated the visual impact of so-called microsaccades, or small fixational eye movements (Nyström).

In an innovative new collaboration between Cognitive science and Strategic communication, eye tracking was used to study consumers' decision making during online shopping (Gidlöf, Holmberg). Other new projects involved the use of eye-tracking to study reading in Arabic (Hallberg, Holmqvist, Niehorster), decision making under stress (Dahl, Granér, Johansson), and the sense of exclusion and social influence in political groups (Bäck, Knapton, Niehorster, Sikström, Siven), among other things. Multiple international collaborations were underway with, for example, universities in Utrecht, Oxford, Tampere, and Münster. National collaborators included Malmö University and the Swedish University of Agricultural Sciences at Alnarp.

New method development involved experimenting with eyetracking to find new ways of controlling and navigating virtual reality (VR). One important aspect is the use of eye-tracking to assess how well VR applications work for individual users (Garde, Nyström, Niehorster). Developments in this area will also have implications for ongoing collaborations with Astronomy (see box p 15).

The Lab also continued its involvement in two international standardisation efforts for eye-tracking technologies. The first enterprise seeks to set a safety standard for infra-red emissions from eye trackers (Mulvey). This is currently under review by official standardization structures. The second endeavour, involving both industry and research, deals with standard methods and measures of eye-tracker data quality. This project should ensure that eye-tracking works smoothly and safely in many applications ranging from low cost web cameras used to let eyes control the computer mouse, to high end research instruments (Mulvey).

International engagements in 2017 also included presentations at the most important international conferences in the field, for example the VSS and ECEM (Niehorster). International collaborations with colleagues in Utrecht, the Netherlands (Hooge, Hessel), led to improved methods for event detection (Nyström, Niehorster). Further, collaboration with scholars in Oxford (Dalmaijer) involved the large-scale eye-tracking set up in the Digital Classroom (Nyström, Niehorster).

Lab members were also deeply involved in teaching, with invitations to give courses and seminars on eye-tracking methodology both nationally (Nyström) and internationally (Nyström,



Niehorster). These training events reached an estimated 150 students during the year.

Finally, the upgrade of the Digital Classroom, enabled by generous funding from the LMK Foundation, was initiated in 2017. The classroom, which has 25 eye-trackers, will receive new equipment enabling the Lab to continue to provide state-of-the-art facilities and know-how in the eye-tracking field.

ELECTROPHYSIOLOGY. Acitivities involving the use of electrophysiological measurements of brain activity continued to flourish in 2017. The Lab recruited a new expert to be responsible for the EEG equipment with special expertise in effects in auditory processing (Morris).

Research projects using this technology included a continued project, led by a Wallenberg Academy Fellow (Roll), focusing on the interaction between intonation and grammar in language processing (Roll, Novén, Söderström, Horne). Other projects explored how Swedish speakers process linguistic quantifiers (Klingvall, Heinat), how negation is processed in English (Farshchi, Paradis, Andersson), and how learners of Italian process grammatical gender (Gargiulo). Moreover, in a collaboration with the Linneaus University, a study used EEG to examine how German and English learners of second language Swedish handle the Swedish placement verbs *sätta* 'set', *ställa* 'stand', *lägga* 'lay' in comparison to native Swedish speakers (Andersson, Blomberg, Gullberg).

Also, the new modules in the EEG course, and practical tutorials on capping continued (Andersson, Garde).

NEW POSSIBILITIES FOR MRI. An important development for the Lab was the recruitment of a liaison officer (Mårtensson) to link the Lab to Lund University Bioimaging Centre (LBIC, https:// www.med.lu.se/bioimaging_center). LBIC hosts state-of-theart magnetic resonance imaging (MRI) facilities to study brain anatomy and brain function. Functional magnetic resonance imaging (fMRI) in particular has become an important tool for Cognitive science, Linguistics, Psychology, and other disciplines to study human functioning and learning. The tighter link between the Humanities Lab and LBIC is a crucial move to further facilitate training and access to additional tools, especially in light of the emphasis on so-called Medical Humanities at LU, involving the Medical Faculty and the Joint Faculties of Humanities and Theology.

3D SCANNING, VIRTUAL REALITY (VR). The use of 3D and VR continued to develop building on several projects initiated in previous years. This includes a collaboration with the Gebel el Silsila Epigraphic Survey Project in Egypt (Nilsson, Ward). Within this project, a suitable workflow for 3D documentation of skeletal remains under difficult field conditions was developed (Lindgren). Moreover, in another project involving excavations in Hermione, Greece, a high resolution digital elevation 3D model of the city was created in 2016, and in 2017, data collection and post-processing continued in this project (Lindgren, Landeschi, Gerding). Similarly, a project on the 3D documentation of 2,500-year-old mass graves in Faliron, Greece, continued, and in 2017 a visualization system was developed to give Greek archaeologists access to 3D data (Lindgren, Larsson). Further, the Lab was involved in the 3D-scanning of the monastery church in Vadstena (Lindgren). An online model of the church was created for researchers in the Extraordinary Sensescapes project, an international enterprise joining scholars from Arizona, Uppsala, Lund, Leuven and the Alamire Foundation to virtually reconstruct and study the world of Birgittine nuns (Autio, Bard, Borgehammar, Lindgren, Ljungar Chapelon, Nyberg, Sjöström). This model will be used as a starting point for reconstructing the medieval church as well as the sounds in the church.

Another new project in 2017 was a project by the Educational Technology Group at Cognitive science (Gulz, Haake), looking to create a virtual classroom. This project aims to create a flexible set-up where a virtual classroom can be used to simulate both teaching and learning (Nirme, Jonsson, Rudling, Lin, Mauritzson, Ryrlén, Kustvall-Larsson, Gulz, Haake). A new collaboration between the Humanities Lab, the VR-lab at Design Sciences, and Astronomy was also initiated to develop a tool for visualisation and interaction with all types of 3D data (Lindgren, Garde, Nyström, see box p 15).



All 3D projects have benefited from collaborations with Lund University Center for Scientific and Technical Computing (LUNARC), which provide access to computational resources needed for heavy data processing. Access to super computers has significantly reduced the time of post-processing of 3Ddata, and also enabled the treatment of significantly larger datasets (Lindgren, Follin, dell'Unto).

In terms of upgrading, new types of 3D scanners were acquired in a collaboration with Biology. These new handheld scanners enable the documentation of a greater variety of objects in a smooth and easy way.

VR FOR ASTRONOMY DATASETS. In 2017 there was an increasing demand for exploring big datasets with a VR headset. As a consequence, the Lab continued to investigate how this technology can be used in new cases. Taking advantage of the Lab's experience in mastering big point clouds from 3D scanning and VR, Astronomy was invited to provide datasets with millions of stars, representing The Milky Way (Agertz). Lab members turned this into a VR application (Garde), leading to a case study that has already drawn media attention. The study was later refined by lab members (Lindgren, Garde, Nyström, Niehorster), and the findings used for a successful grant application to work for three years with Astronomy, and Design Sciences (Lindgren PI; see box p 15). The goal is to provide a maintainable VR



framework that easily adapts big complex data from different fields. This work also was an important element in the Theme group entitled *DATA* at the Pufendorf Institute for Advanced Studies (http://www.pi.lu.se/) at LU (see Other areas), bringing together scholars from six faculties and the University Library (see box p 21).

MOTION CAPTURE (MOCAP). Motion capture technology enables the recording of human bodily movements in 3D with high spatial and temporal resolution. The motion capture system consists of eight high-speed infrared cameras and a high-speed video camera, linked to each other and a recording computer. The infrared cameras detect and record the 3D position of reflective markers strategically located on the moving individual's body. There has been a steady increase in the use of motion capture data. A preliminary study was carried out in collaboration with the Center for Textile Research in Copenhagen, with the purpose of analysing crafts, and thread spinning in particular. The Lab also helped develop methods for synchronising motion capture recordings with electrophysiological recordings of brain activity (EEG) and electromyographic recordings of the electric activity of muscles (EMG) (Larsson, Lindgren).

The Wallenberg Scholar project *Embodied bilingualism* (Gullberg) continued to use motion capture to build and examine speech-gesture profiles of native and non-native speakers of Swedish, French and English, in order to probe issues of bimodal language processing in mono- and bilingual speakers. A validation study directly compared the same speakers' gesture performance with and without motion capture markers in order to ascertain potential effects on gesture production. Another thread in the project involved the study of event detection using machine learning. One goal of this project is to identify the vital characteristics of movements defining the beginning and the end of a gesture, based on different marker setups. This pilot project showed promising results, and will be continued in 2018 (Christensen, Garde, Gullberg).

The Linnaeus Centre *Thinking in Time: Cognition, communication and learning* also continued to use motion capture to build virtual language users to explore gesture-speech integration (Nirme, Gulz, Haake, Gullberg). In particular, in one project virtual agents were built based on motion capture recordings of real speakers and then experimentally manipulated (Nirme).

ARTICULOGRAPHY. Like motion capture, articulography enables the recording of human bodily movements in 3D with high spatial and temporal resolution, specifically of the speech articulators, but also facial and upper body movements. Measurements are obtained by recording the locations of small sensor coils attached to the tongue, the jaws, etc. in an electromagnetic field.

Research using the electromagnetic articulograph (EMA) includes a PhD Project in phonetics, examining articulatory movements involved in Swedish prosody (Svensson Lundmark). This project has led to the development of a new visualisation technique (Frid, Svensson Lundmark). In addition, much work went into updating data collection procedures, including prompting scripts and new methods to glue sensors to articulators (Frid, Schötz, Svensson Lundmark). These methods were tested in a project which compares the acoustic and articulatory correlates of pitch accents and lexical tones in Swedish and Mandarin Chinese (Frid, Gao, Svensson Lundmark, Schötz). A new project bringing together scholars from KTH, the Linnaeus University and LU will also use the articulograph to study prosodic prominence in speech and head gestures (House, Frid, Ambrazaitis, Svensson Lundmark).

Lab members also developed training in articulography for students of logopedics and speech therapy (Schötz, Frid).

BIOPAC. The BioPac system allows researchers to measure physical reactions of the human body such as electrodermal activity (EDA), respiratory activity (RESP), and electrical activity created by the heart, electrocardiograms (ECG). Of these three, EDA or galvanic skin responses are most frequently used. These occur when a human reacts to (un)pleasant or arousing events, e.g., a sudden loud sound, or a disconcerting image. Such responses occur within a time interval of about 1 to 4 seconds after event onset, and the amplitude of the responses is an indication of the strength of the effect that the event evoked. In 2017 the BioPac system was used in a project to measure the effect of mindfulness training using a mobile phone app in collaboration with scholars from the University of Southern Denmark (Kirk, Mårtensson, van de Weijer). Another cross-disciplinary project at LU used the BioPac system to examine the regulation of emotion in youth with obsessive-compulsive disorder (Cervin, Lindvall, Olsson, Perrin).

SOUND AND FILM FACILITIES. The LARM studio provides professional audio and video recording facilities. In 2017 the studio was used for a range of new studies and recordings. In collaboration with University College London, a project was initiated aiming to examine how adults learn sign language as a second language (L2) through mere exposure. The LARM studio was used to create a weather forecast presented in Swedish Sign Language, as well as subsequent experimental sign language stimuli (Gullberg, Marshall). Other projects targeting language learning used the studio to record materials for testing sensitivity to definiteness markers in learners of L2 Swedish (Agebjörn at Gotherburg U.), and phonetic aspects of L2 French (Splendido). Other projects have used the studio to study the deployment of speech and gesture in discourse (Debreslioska, Gullberg), or cross-modal perception of movement and prosody in infants and apes in a project funded by the Linneaus Centre CCL (Ainikin, Gullberg, Gärdenfors, Persson, Rudling).

The LARM studio was also used for academic courses in music production, and tutorials on video recording. The COST training network *Study Abroad Research in European Perspective* also held an event in the studio on new methods for studying language learning after a year abroad.

The studio was frequently used for other purposes such as numerous podcast recordings made by the Joint Faculties of Humanities and Theology, Philosophy, and Communication and Media. In addition, a group of students produced a series of student-tv promotion videos, showing activities on campus. Further, the studio was regularly used by science programmes on national Swedish Radio for conducting interviewed recordings with researchers at LU.

As part of the Lab's tenth anniversary celebrations in 2017, a promotional video of the Lab's facilities and research was



produced in the studio (Roslund, Garde). The video is found on the Lab's homepage.

The anechoic chamber was used in studies on vocal communication and voice treatment (the Linnaeus Centre CCL), and in the preparation of auditory research stimuli and materials, such as in a project studying the acquisition of sounds in second language Italian (Tronnier, Einfeldt, Kupisch).

CORPUS, SWE-CLARIN, DATA MANAGEMENT. The corpus server is a facility for long-term, secure storage of digital research data. It functions both as an archive and as a collaborative workspace, providing options for dynamic data management, possibilities to upload, edit and enrich data and metadata. Metadata are publicly visible, browsable and sear-chable through the corpus browser, while the data themselves are password-protected. With this setup, other researchers can discover data that may be of significance for them and reach responsible researchers to ask for permission to access these data (https://corpora.humlab.lu.se). In 2017, the corpus server comprised just over 4TB data (with a total capacity of 10TB).

In 2017 the project *Language as key to perceptual diversity* (Burenhult), funded by the Bank of Sweden Tercentenary Foundation (*Riksbankens Jubileumsfond*) Jubilee Initiative, entered its second year. The project explores the linguistic representation of the senses across diverse and endangered speech communities in collaboration with cognitive psychology, geography and history of religions. The program, which involves collaborations



with universities in Newcastle, Nijmegen, Odense, Zurich, and Mexico City, continued with intense fieldwork in Malaysia, Ghana, and Mexico. The project employs innovative field techniques for collection and analysis of linguistic data, among them the use of action cameras with built-in GPS for documenting spatial language and behavior. It also pioneers the integration of geographical data in linguistic annotation tools, providing richer environments for analysis of human communication in its environmental context. The complex project data are integrated into the corpus server.

The lab constitutes a node in the Swedish national consortium for language technology, Swe-Clarin (http://sweclarin.se), itself a member of the European Research and Infrastructure Consortium ERIC CLARIN (Common Language Resources and Technology Infrastructure, https://www.clarin.eu/). This e-science consortium aims to make language-and text-based material (including historical material) available as primary research data to the Humanities and Social sciences using sophisticated language and speech processing tools and resources (see box p 17). In 2017 the Lab hosted a two-day national consortium meeting in Lund (Frid, Gullberg) where discussions concerned the extension of Swe-CLARIN as an infrastructure jointly with the Swedish Language Bank (*Språkbanken*; Borin). An extension was granted by the Swedish Research Council at the end of year until 2024, thus consolidating the Swe-Clarin consortium.

Research activities related to Swe-Clarin included developments in on-going research projects started in 2016 under the guidance of the local coordinator (Frid). One example is a project developing a syllable dictionary intended to help organize Swedish words by syllable such that a user can easily find all words starting with the same syllable to assess how many such words there are in Swedish, for example. Such a dictionary can be used for experimental studies on-line language processing. Output from the tool was used in a PhD dissertation in neurolinguistics in 2017 (Söderström). Another example is a tool for marking texts for semantic or meaning components (tagging) to allow scholars to search for specific meaning elements and then compare large sets of texts (corpora). The tool and its output were presented at the national conference Svenskans beskrivning (Gustafsson, Frid). A third project investigated how pitch accent in speech, head and eye-brow movements jointly highlight information (Ambrazaitis, Frid, House, Svensson Lundmark). Frid developed a tool for automatically detecting and tagging head movements in video data. Finally, a project funded by the strategic area for e-Science, eSSENCE, focused on information extraction from scientific articles in the area of epidemiology (Björk). Frid used methods from so-called natural language processing (NLP) to automatically extract epidemiological facts such as aim, patients, statistical method, and effect size of the result from collections of papers. The project continued as one part of the Theme DATA at the Pufendorf Institute for Adcanced Studies (Björk, Frid, Davies, Lassi, Åström) running 2017-2018 under the rubrique of *Discovery from the written word*.

All tools developed are available via the Humanities Lab.

OTHER AREAS. The Lab continued as an active partner in the strategic research area e-Science in 2017. For example, following on from the Advanced Study Group (ASG) at the Pufendorf Institute for Advances Studies at LU entitled INTE-GRATE: Empowering scientific discovery using computers (Davies coordinator; Gullberg in the steering committee), the Lab participated in a Pufendorf Theme group entitled DATA running 2017-2018 (Davies, Lassi, Åström coordinators, Gullberg in the steering committee; see box p 21). In a uniquely broad constellation, the DATA theme brings together colleagues from the School of Economics & Management, Humanities & Theology, Engineering, Medicine, Science, and Social Sciences, as well as from The University Library. The aim is to discuss and deepen our understanding of data storage, visualization, and discovery, as well as to probe how we work together across disciplinary boundaries. Over two semesters the theme members meet to share expertise, and advance research at the boundaries of research areas in five so-called threads. Since several theme members previously participated in developing a draft for a research data management policy for Lund University, discussions on this topic also continued in the theme group. The theme also hosted guest researchers Anne Beaulieu, Rijksuniversiteit Groningen, Matthew Bietz, University of California Irvine, and Michael

User project

VISUALISING THE **ASSEMBLY OF THE MILKY WAY** - A VIRTUAL REALITY FRAMEWORK FOR **INTERACTIVE EXPLORATION OF COMPLEX 3D DATA** Stefan Lindgren (PI), Marcus Nyström, Henrik Garde.



Diederick C Niehorster (Lund University Humanities Lab), Oscar Agertz, Melvyn B Davies (Department of Astronomy and Theoretical Physics), Mattias Wallergård (Department of Design Sciences)

The Lab investigates how VR technology can be used by trying it on new cases. An important issue is whether VR devices actually can improve researchers' ability to explore big and complex data.

Building on a pilot project creating a VR model of the Milky Way, this project aims to provide a maintainable VR framework that easily adapts big complex from different fields. Witt, Purdue University, each with expertise in different areas relating to the theme. Frid and Gullberg are core members, but several other Lab members participated in the work, especially on aspects of language and on virtual reality aspects, attended the seminar series, etc. (Garde, Nyström, Lindgren, Larsson).

The Lab also continued its engagement in the area creating digital platforms for so-called 2D time and space based data visualisation (see further National and international collaborations p 20). The technique, mainly applied to cultural heritage data, allows different data types to be linked (e.g. manuscripts, visual representations of artefacts, metadata, and GIS data) in SQL databases visualised in online interfaces. One such project is the Roman Empire Vector Map project, where Lab members (Åhlfeldt), in collaboration with Klokan Technologies GmbH, Switzerland, have developed a new, digital map of the Roman Empire using vector tiles technology. The project aims at creating a tiled vector map replacing the current raster map of the Digital Atlas of the Roman Empire (DARE, https://dare.ht.lu.se). The project, supported by Pelagios Commons, builds on Open Source technology, and existing openly available data. Vector technology enables maps to be styled in real time, displaying place names in different languages, places attested in certain time periods, and rotation and pitching of the map to achieve a 3D effect. Source material, programming code, a preview of the vector map and links to further documentation are available on Github, https://github.com/klokantech/roman-empire. This project was presented at Stanford University, at the annual conference *Linked Pasts III* (Åhlfeldt).

Work on multimodal analysis of human behaviour (speech and gesture) continued to thrive. These studies exploit audiovideo analysis and coding in the video annotation software ELAN, but also experimental tasks generating reaction times, and motion capture to create virtual agents. Ongoing projects continued to examine cross-linguistic and developmental perspectives on the expression of pragmatic meanings (e.g. expressions such as I don't know; implicit questions, etc.) in Italian and Swedish (Graziano, Campisi, Gullberg). This project received additional funding in 2017 from Åke Wibergs stiftelse (Graziano). An ongoing PhD project also targeted gestural cohesion in German discourse examining reactions to gestural inconsistency, but also the fine-grained linguistic details in maintaining reference (e.g. the shifts between expressions such as a girl, the girl, she or nothing; Debreslioska, Gullberg). Two other PhD projects en route under Gullberg's guidance, partly



as part of her Wallenberg Scholar grant, also targeted speech and gesture. One project explored multimodal conceptual metaphors in Turkish and Swedish monolinguals and bilinguals (Christensen). Swedes prefer discussing musical pitch in terms of height (high/low tones) or brightness (bright/dark), whereas Turkish speakers instead prefer thickness (thin/thick tones). The bilingual data suggest that bilinguals converge on height and use this more than monolinguals, but also maintain languagespecificity in some cases. Another PhD project examines the integration process of speech and gesture information and its effect on memory (Nirme, Gulz, Haake). Other ongoing projects include a collaboration with Israel on how facial expressions and manual gestures combine to create different meanings (Sandler, Gullberg). A joint project with University College London also continues to examine whether and if so how much Swedish Sign Language adults can learn through mere exposure and with no instruction (Janke, Marshall, Gullberg). A new project investigates the interaction between culture and personality traits on gesture production (Graziano, Gullberg).

At the end of the year, Gullberg's Wallenberg Scholar grant, *Embodied bilingualism*, was also extended for another five years with funding from the Marcus and Amalia Wallenberg foundation.

Other work used a combination of keystroke logging and eye-tracking to investigate reading and writing jointly. This includes a joint study between Linguistics, Literature and Psychology which records the writing processes (e.g., reading the text during writing, and the revision of the text) of two poets during the real-time composition of a poem. The work was presented nationally and internationally under the title *A poem is born* (V. Johansson, Smedberg Bondesson, R. Johansson). A PhD project also used keystroke logging to study the writing of second language learners of English (Schamp-Bjerede).

THE CLARIN KNOWLEDGE CENTRE OF LUND UNIVERSITY HUMANITIES LAB

LU Humanities Lab is a member of the Swedish national consortium for language technology, Swe-Clarin (http:// sweclarin.se), itself a member of the European Research and Infrastructure Consortium ERIC CLARIN (Common Language Resources and Technology Infrastructure, https://www.clarin. eu/). This e-science consortium aims to make language-and text-based material (including historical material) available as primary research data to the Humanities and Social sciences using sophisticated language and speech processing tools and resources. Increasing amounts of language materials are available in digital form, and the need for tools to handle such data volumes increase constantly.

In 2017 the Lab became a certified CLARIN *Knowledge Centre* with special focus on multimodal and sensor-based methods (PID:https://hdl.handle.net/11372/DOC-137). Importantly, the Swedish Research Council also granted an extension of the funding until 2024.

The Lab hosted one of the national consortium meetings in Lund in a two-day event (Frid, Gullberg). The research activities included a diverse range of projects under the guidance of the local coordinator (Frid). For example, a tool was developed to examine how pitch accent in speech jointly highlights information with head and eye-brow movements (Ambrazaitis, House). This work led to a successful grant application to the Swedish Research Council (House, Ambrazaitis, Frid, Svensson Lundmark). A third project, co-funded by the strategic research area for e-Science, eSSENCE, focused on information extraction from scientific articles in the area of epidemiology (Björk).





Training, teaching, consultations

Training is an important part of the Lab activities. It is provided through various types of interventions (courses, group tutorials, individual tutorials/consultations, and guest lectures) depending on the topic and expected audience. Topics include areas such as visualisation of articulatory data, mobile motion capture setups, and data storage. This work is motivated by the goal to facilitate and enable interdisciplinary, intra- and inter-faculty research, and increase access to the technological resources that require advanced methodological skills.

PhD courses run over a number of weeks and focus on research technologies or broader methodological approaches. In 2017, Lab members taught courses on programming, experimental design and statistical analysis. Group tutorials (3 in 2017) are given on data collection or specific software such as Elan, a tool for video annotation. A large part of the training provided by the Lab takes the form of individual tutorials or consultations (94 in 2017). These typically focus on a specific research related problem or methodology related to a given study such as software programming, recording, analysis, and experiment set ups. An important part of such consultations involve guidance in statistics and methodology (van de Weijer), and the assisting with audio/video recordings and podcasts in the LARM-studio (Roslund) to meet increasing needs from users both within and outside of Lund University. Other areas of consultation include programming, ranging from script writing to visualisation of data (Garde); language technology (Swe-CLARIN coordinator Frid); and pedagogical tools (Splendido). In addition to personal consultation, a series of filmed tutorials (Splendido) were also published on the Lab's website.

Lab members also contribute to courses outside the Lab by giving adapted lecture series or workshops. In 2017 Lab members participated in both local and international courses in, for example, visual studies and speech and language therapy (*11 occasions*) through interventions on topics such as statistical analyses, eye tracking, and phonetic transcription. Lab facilities are also recruited for laborative modules and training in regular academic programmes such as the LARM studio for music production, the 3D unit for Virtual reality in Archeology, and the digital classroom for students from Biomedical Engineering.

PHD COURSES

- Experimental Design
- Programming for the Behavioural Sciences
- Statistical analysis for the behavioural sciences I, Lund University

GROUP TUTORIALS

- Introduction to Elan: transcription, coding and analyses
- Excel basics for administrative staff, LU
- Excel advanced for administrative staff, LU

CONSULTATIONS

The lab offered consultations on software, technology, and analyses on 94 occasions to internal and external users in the lab.

National and international collaborations

Lund University Humanities Lab and its members have thriving local, national, and international collaborations and networks. Those linked to individual scholars are too numerous to list here, but the Lab also has many institutional collaborations.

LOCAL. The Lab has many local collaborations across Lund University. Some are longstanding such as with the Linnaeus Centre Thinking in Time: Cognition, Communication, and Learning, the departments of Linguistics, Archeology, etc. Newer collaborations include joint work with the Division of Logopedics, Phoniatrics, and Audiology, at the Department of Clinical Sciences (Schötz, Splendido) to build academic courses on methods for studying speech production and phonetic transcription of (Swedish) speech. The collaboration has resulted in screen casts of short lectures on the Lab website (http://www.humlab. lu.se/en/education/tutorials/taltranskription-in-swedish/) which are now open to everyone. In the domain of e-Science, local collaborations have substantially intensified (see below under National collaborations, Research, box p 17, etc.). Stronger collaborations have also been initiated with Lund University Bioimaging Centre through the recruitment of a liaison officer (Mårtensson) with a double appointment at both units to facilitate and boost the use of and training in brain imaging techniques.

NATIONAL collaborations are numerous. The Lab is a node in the national consortium *SWE-CLARIN* (http://sweclarin.se/; see box p 17), itself part of *CLARIN*, the European Common Language Resources and Technology Infrastructure (http://clarin.eu/). SWE-CLARIN links nine Swedish institutions around issues of language technology, including the *Swedish National Data Service (SND)*. As a national node and an accredited *Knowledge Centre*, the Lab provides tools and expertise related to language archiving, corpus and (meta-)data management, assistance with sensor-based methods, and speech and language technology. The local coordinator (Frid) was involved in a range of pilot projects in 2017 (see box p 17 and Research).

The Lab also continued and intensified its partnership with eSSENCE, a national strategic research program in e-Science (http://essenceofescience.se/) involving the universities of Uppsala, Lund, and Umeå. The overall enterprise focuses on the development of tools for handling, storing and retrieving research data in digital form. Gullberg is a member of the local steering committee. Data flows, large databases, heavy data computation, and data visualisation, achieved with the assistance of LUNARC, the Lund University Center for Scientific and Technical Computing (Gullberg member of the executive board), was further exploited in an ongoing eSSENCE-funded project in Archeology to generate 3D models online in the field to support archeological excavation and documentation (dell'Unto, Campanaro, Landeschi, Lindgren, C. Larsson; see box p 22). A new project was funded by eSSENCE in 2017, concerning the use of virtual reality to visualize the Milky way (see box p 15), under the leadership of Lab member Lindgren, and with participants from the Lab (Garde, Nyström, Niehorster), from Astronomy, Physics, the Ingvar Kamprad Design Centre at LU.

The local collaborations in the domain of e-Science further intensified in 2017 through the Lab participation in the Theme Group DATA at the Pufendorf Institute for Advanced Studies (see box p 21) which over two semesters brings together researchers from six faculties and the University Library to discuss how we approach research data around the key themes of discovery, prediction, visualization, and curation. Weekly work meetings and seminars allow for in-depth work, complemented by hack-days, and invited guest researchers contribute to fruitful elaborations of key notions. Further to this, Lab members also participate in REACH, a forum promoting interactions between the strategic research areas and other research groups of excellence at LU. REACH aims at facilitating joint research and improving the knowledge and expertise in using computers and computational techniques within research throughout LU. It is coordinated by the LU node of eSSENCE. In 2017 the Lab participated in REACH activities, for example by giving lectures on the use of particular software (van de Weijer).

The Lab is also linked to *HUMlab Umeå* and work within Digital Humanities, a burgeoning field where the Lab also has links to the *Centre for Digital Humanities* in Gothenburg. Work on joint funding applications with Umeå was undertaken to strengthen the links and intensify collaborations, specifically in the area of 2D mapping, linking linguistic or cultural heritage data to geographical data (known as time and space-related data), an area where both universities have developed expertise (Åhlfeldt, Rubensson, Roslund, Ahlström in Lund; Cocq, Foka, Edlund in Umeå).

INTERNATIONAL. The Lab also has several international longstanding collaborations. In the field of 3D scanning, the Lab has several international collaborations through its members (Lindgren, C. Larsson). These networks include the *Centre for Textile Research* in Copenhagen, Denmark, the *Swedish Institute in Athens* and CNR-ISTI in Pisa. 3D visualisation is becoming increasingly interesting also for tourism. Several partnerships develop as a function of this, for example in Mottola, in southern Italy (Lindgren, Campanaro). In the domain of eye-tracking, long-standing collaborations with the University of Tampere and Utrecht University involved both sharing of skills in training and research activities in 2017.

The Humanities Lab is also a partner in a number of international centres such as the *Centre for Multilingualism in Society across the Lifespan*, Oslo; *Advanced Studies on Language complexity*, Lyon, France; and *DigHumLab* Denmark, the Danish national consortium for digital humanities.

The Humanities Lab continues to host many visiting scholars from all over the world for both short- and long-term stays (see Visitors). These visiting scholars contribute to the environment by generously giving guest lectures and engaging in scholarly exchange with the whole environment.

DATA: A PUFENDORF THEME GROUP

Data is central to understanding the world around us. Making good use of data is a vital part of tackling societal challenges. The DATA theme at the Pufendorf Institute for Advanced Studies at Lund University (https://www.pi.lu.se/en/activities/ theme-data) brings together colleagues from several faculties of Lund University: the School of Economics & Management, Humanities & Theology, Engineering, Medicine, Science, and Social Sciences, as well as from The University Library.

The DATA theme will develop approaches concerning how data is stored and accessed, how we visualise data, how we discover patterns in data, and how we use it to predict future outcomes.

The DATA theme consists of five distinct threads which are interwoven as theme members are each engaged in several threads:

- Thread One: Archiving vanishing languages
- Thread Two: Visualising the Universe
- Thread Three: Discovery from the Written Word
- Thread Four: A Catalogue of Stellar Spectra
- Thread Five: Understanding How We Work Together

The theme is coordinated by Melvyn Davies, Astronomy, Monica Lassi, the University Library, and Kalle Åström, Centre for Mathematical Sciences. Humanities Lab core members are Johan Frid, Marianne Gullberg.

DISCOVERY CURATION PREDICTION VISUALISATION Finally, Lab members also regularly give invited scholarly talks about their own research both within and outside Lund University (see Invited talks and guest lectures). These activities contribute in important ways to building new connections. For example, Lab members presented language processing studies about the brain and multilingualism to teachers in the south of Sweden – including pre-school teachers, teachers in elementary schools, teachers of Swedish, teachers of Swedish as a second language for immigrants. Through Kristianstad University, the portal *Skolporten*, and Hässleholm municipality, the Lab has reached more than 800 teachers.

User project

USING HIGH PERFORMANCE COMPUTING RESOURCES FOR THE RECORD AND ANALYSIS OF CULTURAL HERI-TAGE SITES. eSSENCE (2015-2017)

Nicoló Dell'Unto (Institute of Archaeology and Ancient History) Stefan Lindgren (Lund University Humanities Lab) Giacomo Landeschi (Institute of Archaeology and Ancient History) Anders Folin (Lunarc)

In the last two decades the spread of digital technology, including Unmanned Aerial Vehicles (UAV) or drones, has strongly affected the way archaeologists and experts on the cultural heritage sector record, analyse, document, and manage information detected during the field investigation process. Accurate 3D descriptions of very large portions of landscape and monuments can now be employed in support of complex simulations and analyses. Yet, despite the results obtained, the post processing of data is a complex operation, which demands significant computational resources. Normally, acquired data are processed in the laboratory, where powerful workstations are used to generate the 3D models. In a collaboration between LU Humanities Lab, the Institute of Archaeology and Ancient History, and the High Performance Computing Center (Lunarc) at Lund University this project develops an infrastructure based on the remote use of High Performance Computing facilities for the processing of large 3D datasets directly in the field. The procedures developed allow scholars to reduce time and resources used during the acquisition campaign, and enable the use of more qualitative three-dimensional information for the analysis of monuments and archaeological sites.



Visibility, access, outreach

The Humanities Lab organises a wide range of events and demos, often with concrete demonstrations of ongoing research and hands-on elements (31 tours and lab demos in 2017 for local, national, and international visitors). In 2017 we hosted prominent visitors such as the President of the Croatian Republic, Kolinda Grabar-Kitarovic, the Swedish Ambassador to Croatia, Lars Schmidt, the board of the Crafoord Foundation, and the British Ambassador to Sweden, David Cairns. Of course, we also hosted many officials and scholars from universities all over the world, including a delegation of Vice chancellors from the League of European Research Universities (LERU; see Lab demos and Visitors). We continue to offer introductory tours and demo sessions to undergraduate and postgraduate programs, and new employees at Lund University. We also encourage teachers and supervisors to participate on these occasions. The group tutorial called Introduction to the Humanities Lab (Splendido et al.), which allows novices to try out a number of things in the Lab, has guickly become very popular.

The Humanties Lab also organised and participated in three workshops on infrastructure and methodological concerns, on issues of EEG and 3D archeology. We also hosted a workshop on methods and measurements more generally as part of a COST-network dedicated to the study of second language acguisition abroad. This event was open to a broader public. LU Humanities Lab (Gullberg) was also engaged in the organisation of the event the Amazing Brain Symposium, a full day of lectures by world-leading experts open to the general public as part of the Lund University 350-year celebrations. The event took place in Lund City Hall. The filmed talks and blog comments can be found at https://www.lu.se/event/the-amazing-brainsymposium. Four further academic conferences and symposia took place in the Lab on topics ranging from speech and gesture in discourse, the acquisition of sign language, via multilingualism in South Africa, to language as key to perceptual diversity.

Importantly, as part of the Lab's ten-year celebrations, we hosted an academic symposium to invited guests. Invited speakers gave examples of research conducted in the Lab and also talked about the beginnings of the infrastructure. The filmed talks from the academic symposium are available on the Lab website. The celebrations also involved a day of practical demonstrations of Lab technology open to the general public at the Museum of Sketches for Public Art (see p 16). The Lab celebrations were noted in media, and are documented in full on the Lab website.

As stated above, Lab members also give a number of invited talks in both academic and popular science contexts, many of which showcase Lab activities and technologies. For example, the Humanities Lab participated in local outreach events such as the popular Humanities Days (HT-dagarna) organised by the Joint Faculties of Humanities and Theology, but also in national outreach events such as the Gothenburg Book Fair (Petersson, Lindgren, Larsson). Lab members gave talks on topics such as multilingualism, language and brain (Andersson, Gullberg), intangible cultural heritage (Burenhult), data driven research (Gullberg), text analysis and topic modelling (Frid), 3D documentation (Lindgren), statistics (van de Weijer), language and gesture (Graziano, Gullberg). One Lab member gave a lecture in the Lund University 350 celebrations Jubilee course and a 3 min presentation on the big celebratory party for staff and students (Schötz).

As part of the tenth anniversary, a new Lab demonstration film was developed by members (Roslund, Garde), which is available on the Lab website. Short video clips and slideshows further contribute to the dissemination of Lab activities in public and popular settings.

The outreach activities also included appearances in popular media. For example, members were interviewed in local newspapers *Sydsvenska Dagbladet* (Gullberg, Schötz, dell'Unto), and *Skånska Dagbladet* (Lindgren); and in national newspapers such as *Svenska Dagbladet* (Gullberg). Members also appeared on Swedish national television talking about cat vocalisations (Schötz). Members (Garde) also contributed materials to *Vetenskapens Värld* (the science programme at national television) providing 3D animations of the Milky Way for an episode about virtual reality models of the universe. Members also appeared on national Swedish radio to discuss adult language learning (Gullberg), how 3D technology can solve ancient murder mysteries (Lindgren), or virtual reality studies of the universe.

Finally, the Lab continued to communicate via its web site and social media. The web site was updated to be readable on

mobile devices. Information about policies, user agreements, how to participate in experiments, etc., is available there. News coverage and social media activities (Facebook, Twitter) were also updated regularly.

Lab demos

INTERNATIONAL (15)

- Beijing University of Aeronautics and Astronautics, China
- Center for Textile Research, Copenhagen University, Denmark
- Delegates at Symposium: Capturing the senses: Digital methods for sensory archaeology
- Exchange master students
- Hungarian Academy of Sciences & Budapest University of Technology and Economics, Hungary
- LERU (League of European Research Universities)
- New York University, USA
- Syddansk Universitet, Denmark
- Tilburg University, Netherlands
- Tim Bishop, artist
- University of Denver, USA
- University of Gießen, Germany
- University of Iceland, Iceland
- University of Leicester, Great Britain
- University of Oslo, Norway

NATIONAL (16)

- A day of practical demonstrations for the general public at the Museum for Artistic Process and Public Art
- Department of Arts and Cultural Sciences, Lund University
- Department of Astronomy and Theoretical Physics, Lund University
- Department of Clinical Sciences, Diabetes and Endocrinology, Lund University
- Department of Clinical Sciences, Division for Child and Adolescent Psychiatry
- Department of Clinical Sciences, Logopedics
- Department of Educational Sciences, Lund University
- Executive Board, Crafoord Foundation, Lund
- IT and library departments, Humanities and Theology, Lund
 University
- Master students, General Lingustics, Centre for Languages and Literature, Lund University
- Olympia School, Helsingborg
- School of Architecture, Faculty of Engineering, Lund University
- Stockholm University
- Studio AF, Lund
- Swe-CLARIN consortium
- TISUS conference delegation

User projects

A NEUROPHYSIOLOGICAL STUDY OF HOW GERMAN AND ENGLISH LEARNERS OF SWEDISH PROCESS SWEDISH PLACEMENT VERBS

Annika Andersson (Linneaus University), Marianne Gullberg, Frida Blomberg (Centre for Languages and Literature)

Languages differ in how placement events are described. Swedish has three obligatory placement verbs for events where objects have support from below: sätta 'set', ställa 'stand', and lägga 'lay'. Although frequent, these verbs pose challenges for learners. The current project investigates how verb meanings interact with event properties in adult second language learners' understanding of these verbs using event-related potentials (ERPs) and appropriateness ratings. The project will compare ratings and ERP effects of German and English learners of Swedish to demonstrate whether, when, and how the first language influences the processing of words in the second language. German like Swedish makes many distinctions using several verbs (e.g. stellen, legen), whereas English does not with its single general verb (put). Participants watch still images of placement events where object properties and orientation are varied, and then watch visually presented sentences describing these events while ERPs are recorded. The results will extend knowledge from production studies, indicating that semantic reorganization is difficult to attain, to online language processing (ERPs).

SHARP – SHARED READING AFTER PAIN REHABILITA-TION

Anders Ohlsson (PI), Torbjörn Forslid, and Anna W Gustafsson (Centre for Languages and literature), Kajsa Järvholm (Department of Psycholoy), Marcelo Rivano Fischer and Henrik Grelz (The Pain Rehabilitation Department at Skåne University Hospital)

The SHARP project addresses a major challenge to the individual and to society: *chronic non-cancer pain*. The project explores the effects of a group-based intervention based on Shared Reading (SR). Eight to 12 people gather weekly with a facilitator to read and discuss literary fiction and poetry for 90 minutes. This intervention is offered as an add-on activity to people who have undergone a pain rehabilitation programme at Skåne University Hospital.

The intervention provided by SHARP is in line with the hospital pain rehabilitation programme, based on Acceptance and Commitment Therapy (ACT), rooted in Cognitive Behavioural Therapy. A major aim is to help people to live fuller lives in the presence of pain, by shifting their focus from pain control to adopting a goal-oriented approach, by developing new mental perspectives and enriched language repertoires, and by identifying new life values.

SHARP will collect and analyse a range of data: video-recorded group meetings, audio-recorded interviews, psychological tests, medical assessments and evaluations. The recordings are done in the LARM-studio in the Humanities Lab.

Media appearances

January 4, 2017 Lund University Home Page *"Barn drabbas orimligt hårt av internetreklam"* Nils Holmberg

January 25, 2017 HT-podd *"Hur ser humanisters och teologers relation till teknik ut?"* Marianne Gullberg and others

February 6, 2017 Sydsvenskan *"Så har 3D-tekniken revolutionerat arkeologin – Lundaforskare är pionjärer* Nicolo Dell'Unto

February 21, 2017 Sydsvenskan *"Här är de digitala verktygen som gör det lättare – och roligare – att lära sig språk"* Marianne Gullberg and others

February 28, 2017 Svenska dagbladet *"Myt att äldre har svårare att lära sig nya språk"* Marianne Gullberg

February 28, 2017 Svenska Dagbladet *"Begåvning inte avgörande när du lär dig nytt språk"* Marianne Gullberg

February 28, 2017 Svenska Dagbladet *"8 experttips: Så lär du dig ett nytt språk snabbast"* Marianne Gullberg April 21, 2017 Sveriges Radio P4 Malmöhus "Humanistdagarna: 3D-teknik löser mord från järnåldern" Stefan Lindgren and others

April 21, 2017 *Skånska Dagbladet* "Framtidstema på HT-dagar" Stefan Lindgren and other

April 24, 2017 Svenska Dagbladet *"Många olika förmågor avgör hur lätt du har att lära nya språk"* Marianne Gullberg

May 15, 2017 Motala tidning *"Därför 3D-scannas klosterkyrkan"* Stefan Lindgren

September 1, 2017 Förskoletidningen "Snabbast eller bäst? Om barns och vuxnas andraspråksinlärning" Annika Andersson

September 26 Forskning, Swedish Research Council *"Myterna om flerspråkighet"* Annika Andersson and others

LUM (Lund University staff magazine) No. 5, 2017 *"Humanistlaboratoriet firar tioårsjubileum"* Marianne Gullberg

LUM (Lund University staff magazine) No. 5, 2017 *"Förnyelse – nyckeln till ett starkt universitet"* Marianne Gullberg October 20, 2017 Skånska Dagbladet *"Forskning visades upp på museum"* Marianne Gullberg

November 9, 2017 Vetandets värld, Sveriges Radio *"Så gör språkgenier när de lär sig språk"* Marianne Gullberg and others

November, 2017 Lundagård No. 7, 2017 *"Pingu hjälper forskare i ny studie"* Maria Graziano

November 26, 2017 Sydsvenska Dagbladet *"Förstår du vad din katt säger?"* Susanne Schötz

November 27, 2017 TV4 Nyheterna "Nu ska kissarnas dialekt kartläggas" Susanne Schötz

November 28, 2017 Vetenskapsradion, Sveriges Radio "Med VR mot Vintergatan"

December 4, 2017 SVT: Vetenskapens värld *"3D-animering av Vintergatan"* Henrik Garde

December 7, 2017 Forskarn & jag, Magnus Erlandsson "#9 Johan Mårtensson: neuropsykolog & hjärnforskare" Johan Mårtensson

December 8, 2017 Lokaltidningen Lund *"De tar Vintergatan till Sölvegatan"* Henrik Garde and Diederick C. Niehorster



Highlight: Connecting discourse in speech and gesture

An international workshop entitled *Connecting discourse in speech and gesture* was held in Lund March 30-31, 2017, generously funded by the Birgit Rausing Language Programme. The workshop aimed to stimulate a crossdisciplinary discussion about how speech and gestures are deployed in connected discourse. To allow listeners to follow who is doing what to whom why, when, and where in discourse, speakers must arrange linguistic elements following grammatical and pragmatic discourse principles in order to highlight connections between elements, mark switches in topic, etc. They also deploy gestures to do this. For example, an entity that is first introduced in discourse, is more likely to be accompanied by a gesture than an entity already mentioned; a gesture can be used to express an unspoken question. However, several issues remain unclear about how speech and gestures are orchestrated in discourse.

The workshop therefore brought together scholars from Europe and the US. Over the course of two full days they presented their work and discussed the role of speech and gesture in discourse from different perspectives.

Conference chairs:

Maria Graziano, Lund University Humanities Lab Emanuela Campisi, Lund University Humanities Lab & Università degli Studi di Catania, Italy Marianne Gullberg, Centre for Languages and Literature & Lund University Humanities Lab

Funders: Birgit Rausing Language Programme

Organisation of conferences, workshops and symposia

January 26, 2017 **EEG workshop 1 How to record and attain excellent EEG data** Lund University Humanities Lab Annika Andersson, Henrik Garde

March 30, 2017 Connecting discourse in speech and gesture LUX, Lund University Maria Graziano, Emanuela Campisi, Marianne Gullberg

April 6, 2017 Methods and measures of input and second language proficiency/development (a COST-workshop) Centre for Languages and Literature, Lund University Marianne Gullberg, Jonas Granfeldt

April 27 – 28, 2017 **The 2nd Leverhulme Network Workshop on the second language acquisition of sign language** LUX and Pufendorf institute, Lund University Marianne Gullberg

April 30, 2017 LANG-KEY 1st Project Workshop Radboud University, Nijmegen, Netherlands Niclas Burenhult

Maj 18, 2017 How to analyze and artifact reject EEG data using Curry 7, EEGlab and Humlab scripts Lund University Humanities Lab Annika Andersson, Henrik Garde

June 1, 2017 Capturing the senses: Digital methods for sensory archaeology LUX, Lund Unviersity Carolina Larsson, Stefan Lindgren September 19, 2017 Unravelling the multilingual mind Lund University Humanities Lab Marianne Gullberg

October 19, 2017 How Lund University Humanities Lab has changed research. A 10th anniversary celebratory symposium LUX, Lund University Marianne Gullberg and the steering committee

October 20, 2017 A day of practical demonstrations The Museum of Artistic Process and Public Art, Lunds University Lund University Humanities Lab

November 15 – 16, 2017 Swe-CLARIN consortium meeting Lund University Humanities Lab Johan Frid, Marianne Gullberg



Visitors

December 9, 2016 – January 9, 2017 Alessia Dorigoni University of Trento, Italy

January 27, 2017 David Cairns British Ambassador to Sweden

February 14-16, 2017 Peter Indefrey Düsseldorf University, Germany

March 1 – April 30, 2017 Ignace Hooge Utrecht University, the Netherlands

March 6 – 22, 2017 and April 11 – 23 Edwin Dalmaijer Oxford University, Great Britain

March 24, 2017 **Kolinda Grabar-Kitarovic** President of the Croatian Republic **Lars Schmidt** Swedish Ambassador to Croatia

March 26 – April 2, 2017 Emanuela Campisi University of Catania, Sicily, Italy

March 29 – 31 Elisabet Engberg-Pedersen Copenhagen University March 29 – 31 Judith Holler Max Planck Institute for Psycholinguistics, the Netherlands

March 26 – April 1, 2017 Elena Levy University of Connecticut, USA

March 29 – April 2, 2017 Danielle Matthews Manchester, Great Britain

March 29 – 31, 2017 Ted Sanders Utrecht University, the Netherlands

April 2 – June 30, 2017 Chloe Marshall University College London, Great Britain

June 1 – December 31, 2017 **Pavel Trofimovich/Sara Kennedy** Concordia University, Montreal, Canada

June 7, 2017 Claudia Cialone Australian National University, Australia

September 25 – 27, 2017 Henriette Hendriks Cambridge University, Great Britain October 18 – 20, 2017 Peter Wittenburg Max Planck Institute for Psycholinguistics, the Netherlands

October 24 – 26, 2017 Eva Lindqvist-Sandgren Uppsala University, Sweden

November 1 – 3, 2017 Kelly Greenop University of Queensland, Australia

November 13 – 16, 2017 Robyn Berghoff Stellenbosch University, South Africa

Staff members 2017

Annika Andersson Researcher

Niclas Burenhult Researcher

Sara Farshchi Project Assistant PhD student English

Johan Frid Local Coordinator Swe-CLARIN Researcher

Henrik Garde Systems Developer

Maria Graziano Researcher

Josine Greidanus Project Assistant

Marianne Gullberg Director

Nils Holmberg System Administrator Martina Holmgren Administrative Assistant

Kenneth Holmqvist Researcher

Carolina Larsson 3D assistant

Jens Larsson Project Assistant

Stefan Lindgren Research Engineer, Purchasing Coordinator

David Morris Researcher Technician

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